Teacher's Scoring Guide

Grade 5
Mathematics

Fall 2008

Indiana Statewide Testing for Educational Progress

20939-W

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INTRODUCTION

During the fall of 2008, Indiana students in Grades 3 through 8 and Grade 10 participated in the administration of *ISTEP+*. The test for *ISTEP+* Fall 2008 consisted of a multiple-choice section and an applied skills section. For the fall testing, the multiple-choice section was machine-scored. The applied skills section, which consisted of open-ended questions, was hand-scored.

Test results for both the multiple-choice and applied skills sections as well as images of the applied skills student responses will be available online in late November 2008. *ISTEP+* Student Labels and Student Reports will be sent to the schools in early December 2008. It is the expectation of the Indiana Department of Education that schools will take this opportunity to invite students and parents to sit down with teachers to discuss the results. To support this endeavor, the Indiana Department of Education has prepared the following *Teacher's Scoring Guide*. The purpose of this guide is to help teachers to:

- understand the methods used to score the *ISTEP+* Fall 2008 applied skills section, and
- discuss and interpret these results with students and parents.

In order to use this guide effectively, you will also need the Student Report and a copy of the student's applied skills responses.

There are three scoring guides for Grade 5, English/Language Arts, Mathematics, and Science. In this Mathematics guide, you will find:

- an introduction,
- a list of the Mathematics Grade 4 Indiana Academic Standards,*
- rubrics (scoring rules) used to score the open-ended questions,
- anchor papers that are actual examples of student work (transcribed in this guide for clarity and ease of reading), and
- descriptions of the ways in which the response meets the rubric criteria for each of the score points.

When you review the contents of the scoring guide, keep in mind that this guide is an overview. If you have questions, write via e-mail (istep@doe.in.gov) or call the Indiana Department of Education at (317) 232-9050.

* Because *ISTEP+* is administered early in the fall, the Grade 5 test is based on the academic standards through Grade 4.

INTRODUCTION TO THE MATHEMATICS APPLIED SKILLS SECTION

The applied skills section that students responded to this past fall in Grade 5 allowed the students to demonstrate their understanding of Mathematics in a variety of ways, such as using a ruler, explaining a solution, drawing a picture, or interpreting a table or graph.

STRUCTURE

The applied skills section for Grade 5 Mathematics was divided into two tests, Test 7 and Test 8. Each test consisted of seven open-ended questions.

SCORING

Each open-ended question was scored according to its own rubric. A rubric is a description of student performance that clearly articulates the requirements for each of the score points. Scoring rubrics are essential because they ensure that all papers are scored objectively. Each rubric for this administration of the *ISTEP+* Grade 5 Mathematics assessment has a maximum possible score of two, three, or four score points.

NOTE: Images of the questions and student work have been reduced to fit the format of this guide. As a result, figures and diagrams in measurement questions will appear smaller in this guide than in the actual test book.

Rubrics are established prior to testing to describe the performance criteria for each score point. The performance criteria determine the number of score points possible for each question. This process ensures that all responses are judged objectively.

1. Students should not be penalized for omitting:

   - degree symbols
   - dollar signs ($) or cent signs (¢)
   - zeros for place holders; for example, either 0.75 or .750 could be used
   - labels for word problems; for example, *miles*

     NOTE: Students WILL be penalized for use of incorrect labels.

2. Students should not be penalized for:

   - spelling or grammar errors
   - using abbreviations; for example, *ft* or *feet* would be acceptable

3. Students should be given credit for:

   - entries in the workspace that indicate understanding of a complete process even if the response on the answer line is incorrect (i.e., the student would receive partial credit for questions with rubrics that allow for scoring the work)
   - answers not written on the answer line; for example, an answer could be given in the workspace or in the explanation (however, in some cases, because of the multiple calculations in the workspace, placement of an answer on the answer line is necessary to determine which response the student intended). Students WILL be penalized for incorrect answers written on the answer line even if the correct answer appears in the workspace.
   - line graphs only if lines connect the points

CONDITION CODES

If a response is unscorable, it is assigned one of the following condition codes:

A Blank/No response/Refusal
B Illegible
C Written predominantly in a language other than English
D Insufficient response/Copied from text

MATHEMATICS GRADE 4
INDIANA ACADEMIC STANDARDS

- **Number Sense**
  Students understand the place value of whole numbers and decimals to two decimal places and how whole numbers and decimals relate to simple fractions.

- **Computation**
  Students solve problems involving addition, subtraction, multiplication, and division of whole numbers and understand the relationships among these operations. They extend their use and understanding of whole numbers to the addition and subtraction of simple fractions and decimals.

- **Algebra and Functions**
  Students use and interpret variables, mathematical symbols, and properties to write and simplify numerical expressions and sentences. They understand relationships among the operations of addition, subtraction, multiplication, and division.

- **Geometry**
  Students show an understanding of plane and solid geometric objects and use this knowledge to show relationships and solve problems.

- **Measurement**
  Students understand perimeter and area, as well as measuring volume, capacity, time, and money.

- **Data Analysis and Probability**
  Students organize, represent, and interpret numerical and categorical data and clearly communicate their findings. They show outcomes for simple probability situations.

- **Problem Solving**
  Students make decisions about how to approach problems and communicate their ideas. Students use strategies, skills, and concepts in finding and communicating solutions to problems. Students determine when a solution is complete and reasonable and move beyond a particular problem by generalizing to other situations.

Problem Solving is identified as a Process Skill in the Indiana Academic Standards. To ensure that the *ISTEP+* questions that assess this Process Skill are grade-appropriate and that the questions use skills that are contained in the standards, these questions are developed by including at least two different indicators from Content Skills in addition to the indicator from the Process Skill. Some of the Content Standards included in the Content Skills are Computation, Geometry, and Algebra. The additional indicators may be from the same or different Content Skills.

The Content Skills used for each of the Process Skill questions in the Grade 5 applied skills section are shown in the following chart.

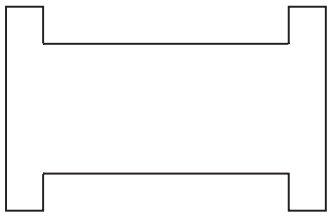
PROCESS SKILL QUESTIONS

Question	Process Skill	Content Skills *Item may map to more than one indicator in a standard.*
Test 7		
2	Problem Solving	Number Sense, Measurement
3	Problem Solving	Computation, Algebra and Functions
Test 8		
3	Problem Solving	Computation, Data Analysis and Probability
6	Problem Solving	Number Sense, Computation
7	Problem Solving	Computation, Algebra and Functions

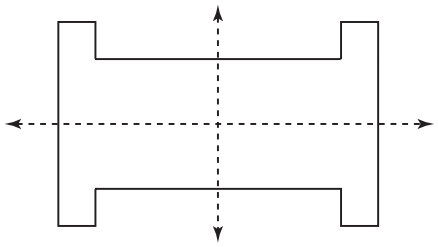
Test 7—Question 1: Geometry

1  Use your ruler as a straightedge.

Draw ALL possible lines of symmetry on the shape below.



Exemplary Response:

- 

NOTE: Award no credit if a line other than a line of symmetry is drawn.

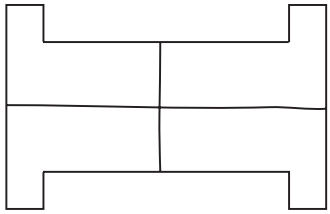
Rubric:

2 points	Exemplary response
1 point	One correct line of symmetry drawn
0 points	Other

SCORE POINT 2

1 Use your ruler as a straightedge.

Draw ALL possible lines of symmetry on the shape below.



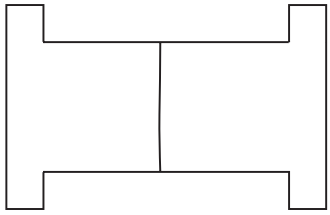
Test 7—Question 1
Score Point 2

This response matches the exemplary response contained in the rubric. The student correctly shows two lines of symmetry. The response receives a Score Point 2.

SCORE POINT 1

1 Use your ruler as a straightedge.

Draw ALL possible lines of symmetry on the shape below.



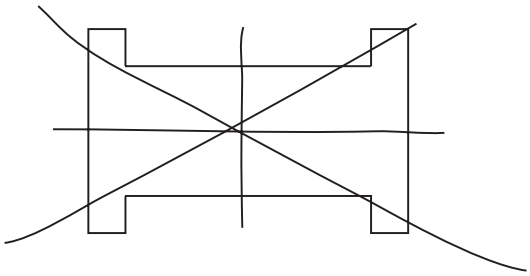
Test 7—Question 1
Score Point 1

This response correctly shows only one of the two lines of symmetry for the shape. Therefore, this response receives a Score Point 1.

SCORE POINT 0

1 Use your ruler as a straightedge.

Draw ALL possible lines of symmetry on the shape below.



Test 7—Question 1
Score Point 0

This response is incorrect. The student shows lines that are not lines of symmetry. Therefore, this response receives a Score Point 0.

Test 7—Question 2: Problem Solving

2 Carla has $10.00 to buy supplies. She wants to buy a set of paints for $8.24 and a pad of paper for $1.98.

ESTIMATE the cost of the paints and the pad of paper to the nearest dollar.

Estimate $ _____

Does Carla have enough money to buy BOTH the paints and the pad of paper? State your answer and explain why or why not on the lines below. Be sure to include the exact cost of both the paints and the pad of paper to support your explanation.

_____

_____

_____

_____

_____

Exemplary Response:

- $10.00

AND

- Carla does not have enough money. The exact cost is $10.22 and the estimate is only $10.00.

OR

- Other valid response

NOTE: Award credit for a valid explanation based on a correct process with an error in computation.

Rubric:

2 points	Exemplary response
1 point	One correct component
0 points	Other

SCORE POINT 2

2 Carla has $10.00 to buy supplies. She wants to buy a set of paints for $8.24 and a pad of paper for $1.98.

ESTIMATE the cost of the paints and the pad of paper to the nearest dollar.

Estimate $ $10.00

Does Carla have enough money to buy BOTH the paints and the pad of paper? State your answer and explain why or why not on the lines below. Be sure to include the exact cost of both the paints and the pad of paper to support your explanation.

No. Because $8.24 + $1.98 = $10.22.

$10.22 > $10.00.

Test 7—Question 2
Score Point 2

This response matches the exemplary response contained in the rubric. The student gives a correct estimate of $10 and gives a valid explanation comparing the exact cost to the estimate. The response receives a Score Point 2.

Test 7—Question 2
Score Point 1

This response shows a valid explanation. However, the student gives an exact answer instead of an estimate as asked. Therefore, this response receives a Score Point 1.

SCORE POINT 1

2 Carla has $10.00 to buy supplies. She wants to buy a set of paints for $8.24 and a pad of paper for $1.98.

ESTIMATE the cost of the paints and the pad of paper to the nearest dollar.

$8.24
+ 1.98
$10.22

Estimate $ 10.22

Does Carla have enough money to buy BOTH the paints and the pad of paper? State your answer and explain why or why not on the lines below. Be sure to include the exact cost of both the paints and the pad of paper to support your explanation.

No, Because she has $ 10.00. But for both paints it would cosint $10.22.

SCORE POINT 0

2 Carla has $10.00 to buy supplies. She wants to buy a set of paints for $8.24 and a pad of paper for $1.98.

ESTIMATE the cost of the paints and the pad of paper to the nearest dollar.

Estimate $ 10.14

Does Carla have enough money to buy BOTH the paints and the pad of paper? State your answer and explain why or why not on the lines below. Be sure to include the exact cost of both the paints and the pad of paper to support your explanation.

No, because it would cost to much.

Test 7—Question 2
Score Point 0

This response is incorrect. The student gives an incorrect estimate and an invalid explanation. Therefore, this response receives a Score Point 0.

Test 7—Question 3: Problem Solving

3 Chad has 42 baseball cards that he wants to give to 3 friends.

On the line below, write a number sentence to show how Chad can evenly divide his baseball cards among his 3 friends.

Number Sentence _____

Chad lost 3 of the baseball cards before giving them to his friends.

How many baseball cards would each friend receive if Chad evenly divided the baseball cards among them?

Show All Work

Answer _____ baseball cards

Exemplary Response:

- 42 ÷ 3 = 14

AND

- 13

AND

- Correct process

Sample Process:

- 42 − 3 = 39

  39 ÷ 3 = 13

OR

- Other valid process

NOTE: Award credit for a correct process with an error in computation.

Rubric:

3 points	Exemplary response
2 points	Two correct components
1 point	One correct component
0 points	Other

SCORE POINT 3

3 Chad has 42 baseball cards that he wants to give to 3 friends.

On the line below, write a number sentence to show how Chad can evenly divide his baseball cards among his 3 friends.

Number Sentence 42 ÷ 3 = 14

Chad lost 3 of the baseball cards before giving them to his friends.

How many baseball cards would each friend receive if Chad evenly divided the baseball cards among them?

Show All Work

```
  13          14
3)39        3)42
 -3          -3
 09          12
 - 9         -12
  0           0
```

Answer 13 baseball cards

Test 7—Question 3
Score Point 3

This response matches the exemplary response contained in the rubric. The student gives a correct number sentence, shows a correct process, and gives the correct answer of 13 baseball cards. The response receives a Score Point 3.

Test 7—Question 3
Score Point 2

This response shows a correct process and the correct answer of 13 baseball cards. However, the student gives an incomplete number sentence in the first part of the question. Therefore, this response receives a Score Point 2.

SCORE POINT 2

3 Chad has 42 baseball cards that he wants to give to 3 friends.

On the line below, write a number sentence to show how Chad can evenly divide his baseball cards among his 3 friends.

Number Sentence 42 ÷ 3

Chad lost 3 of the baseball cards before giving them to his friends.

How many baseball cards would each friend receive if Chad evenly divided the baseball cards among them?

Show All Work

```
   13
3 ) 39
   -3
   09
   - 9
    0
```

Answer 13 baseball cards

SCORE POINT 1

3 Chad has 42 baseball cards that he wants to give to 3 friends.

On the line below, write a number sentence to show how Chad can evenly divide his baseball cards among his 3 friends.

Number Sentence 42 ÷ 3 = 14

$$\begin{array}{r} 14 \\ 3\overline{)\,42} \\ -3\downarrow \\ \hline 12 \\ -\,12 \\ \hline 0 \end{array}$$

Chad lost 3 of the baseball cards before giving them to his friends.

How many baseball cards would each friend receive if Chad evenly divided the baseball cards among them?

Show All Work

$$\begin{array}{r} 14 \\ 3\overline{)\,42} \\ -3\downarrow \\ \hline 12 \\ -\,12 \\ \hline 0 \end{array}$$

Answer 14 baseball cards

Test 7—Question 3 Score Point 1

This response shows a correct number sentence. However, the student shows an invalid process and an incorrect answer. Therefore, this response receives a Score Point 1.

Test 7—Question 3
Score Point 0

This response is incorrect. The student shows an incorrect number sentence, an invalid process, and an incorrect answer. Therefore, this response receives a Score Point 0.

SCORE POINT 0

3 Chad has 42 baseball cards that he wants to give to 3 friends.

On the line below, write a number sentence to show how Chad can evenly divide his baseball cards among his 3 friends.

Number Sentence 42 × 3 = 126

Chad lost 3 of the baseball cards before giving them to his friends.

How many baseball cards would each friend receive if Chad evenly divided the baseball cards among them?

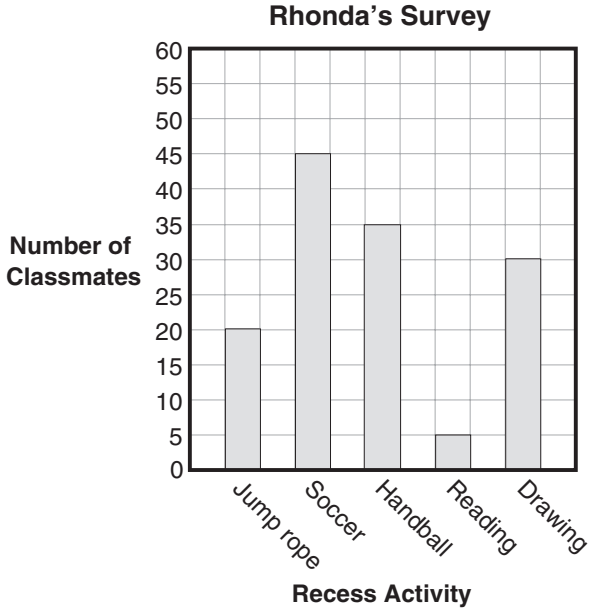
Show All Work

$$\begin{array}{r} 42 \\ \times\ 3 \\ \hline 126 \end{array}$$

Answer 126 baseball cards

Test 7—Question 4: Data Analysis and Probability

4 Rhonda asked her classmates to choose their favorite recess activity. Her classmates' choices are shown in the bar graph below.



How many MORE of Rhonda's classmates chose soccer than drawing?

Answer _____ classmates

How many MORE of Rhonda's classmates chose soccer than handball?

Answer _____ classmates

Exemplary Response:

- 15 classmates

AND

- 10 classmates

Rubric:

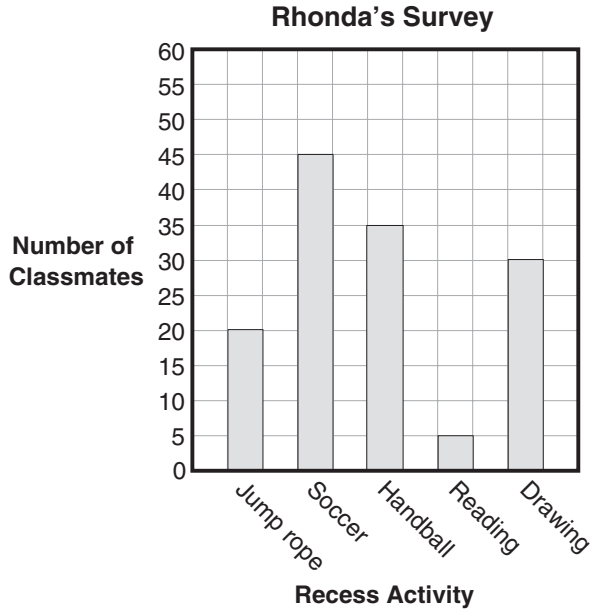
2 points	Exemplary response
1 point	One correct component
0 points	Other

Test 7—Question 4
Score Point 2

This response matches the exemplary response contained in the rubric. The student gives two correct answers. The response receives a Score Point 2.

SCORE POINT 2

4 Rhonda asked her classmates to choose their favorite recess activity. Her classmates' choices are shown in the bar graph below.



How many MORE of Rhonda's classmates chose soccer than drawing?

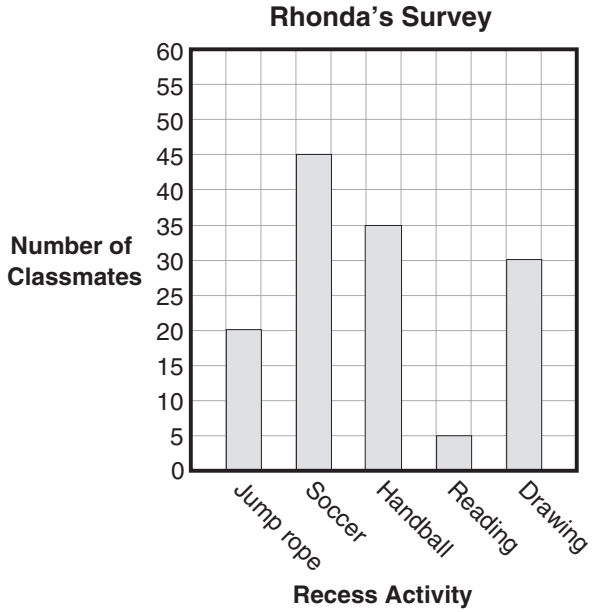
Answer 15 classmates

How many MORE of Rhonda's classmates chose soccer than handball?

Answer 10 classmates

SCORE POINT 1

4 Rhonda asked her classmates to choose their favorite recess activity. Her classmates' choices are shown in the bar graph below.



How many MORE of Rhonda's classmates chose soccer than drawing?

Answer 15 classmates

How many MORE of Rhonda's classmates chose soccer than handball?

Answer 20 classmates

Test 7—Question 4
Score Point 1

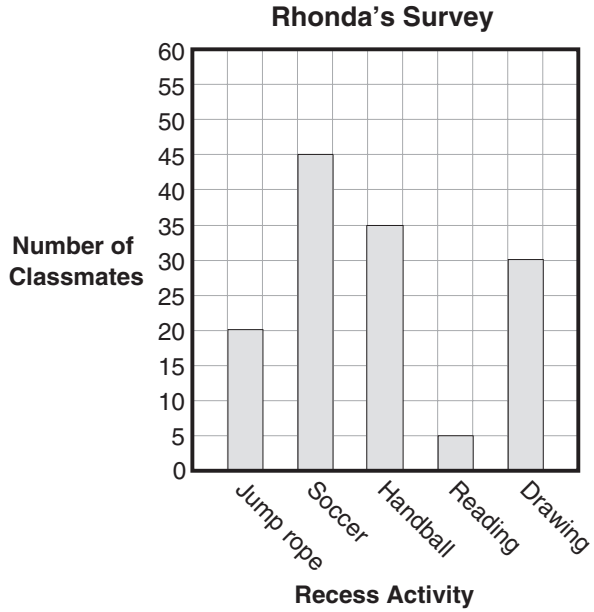
This response shows one correct answer. The student gives an incorrect answer on the second answer line. Therefore, this response receives a Score Point 1.

Test 7—Question 4
Score Point 0

This response shows two incorrect answers. Therefore, this response receives a Score Point 0.

SCORE POINT 0

4 Rhonda asked her classmates to choose their favorite recess activity. Her classmates' choices are shown in the bar graph below.



How many MORE of Rhonda's classmates chose soccer than drawing?

Answer 2 classmates

How many MORE of Rhonda's classmates chose soccer than handball?

Answer 1 classmates

Test 7—Question 5: Data Analysis and Probability

5 Sam has a six-sided cube with 1 yellow side, 3 blue sides, and 2 green sides. He did an experiment to see how many times each color would face up after he rolled the cube. The results of his 11 rolls are shown below.

blue blue yellow green blue green
blue green blue yellow green

Use the data above to complete the frequency table below.

Cube Experiment

Color	Tally	Frequency
Yellow		
Blue		
Green		

Which color did Sam roll the LEAST?

Answer _____

Exemplary Response:

- **Cube Experiment**

Color	Tally	Frequency
Yellow	||	2
Blue	𝍸	5
Green	||||	4

AND

- Yellow

NOTE: Award credit for a correct answer based on an incorrect frequency table.

Rubric:

2 points	Exemplary response
1 point	Correct table OR Correct answer
0 points	Other

Test 7—Question 5
Score Point 2

This response matches the exemplary response contained in the rubric. The student correctly completes the frequency table and gives the correct answer of yellow. The response receives a Score Point 2.

SCORE POINT 2

5 Sam has a six-sided cube with 1 yellow side, 3 blue sides, and 2 green sides. He did an experiment to see how many times each color would face up after he rolled the cube. The results of his 11 rolls are shown below.

blue blue yellow green blue green
blue green blue yellow green

Use the data above to complete the frequency table below.

Cube Experiment

Color	Tally	Frequency
Yellow	| |	2
Blue	𝍸	5
Green	𝍸 |	4

Which color did Sam roll the LEAST?

Answer yellow

SCORE POINT 1

5 Sam has a six-sided cube with 1 yellow side, 3 blue sides, and 2 green sides. He did an experiment to see how many times each color would face up after he rolled the cube. The results of his 11 rolls are shown below.

blue blue yellow green blue green
blue green blue yellow green

Use the data above to complete the frequency table below.

Cube Experiment

Color	Tally	Frequency
Yellow	||	2
Blue	𝍸 |	6
Green	𝍸	4

Which color did Sam roll the LEAST?

Answer yellow

Test 7—Question 5
Score Point 1

This response shows one correct component. The student gives the correct answer of yellow. However, the student incorrectly enters 6 blue cubes in the frequency table instead of 5. Therefore, this response receives a Score Point 1.

Test 7—Question 5
Score Point 0

This response is incorrect. The student shows no correct entries in the frequency table and gives an incorrect answer. Therefore, this response receives a Score Point 0.

SCORE POINT 0

5 Sam has a six-sided cube with 1 yellow side, 3 blue sides, and 2 green sides. He did an experiment to see how many times each color would face up after he rolled the cube. The results of his 11 rolls are shown below.

blue blue yellow green blue green
blue green blue yellow green

Use the data above to complete the frequency table below.

Cube Experiment

Color	Tally	Frequency
Yellow	11	11
Blue	5	16
Green	4	20

Which color did Sam roll the LEAST?

Answer green

Test 7—Question 6: Measurement

6 Wally had $52. He then bought a CD player and 2 CDs. The CD player cost $28.25 and the CDs cost $4.75 each.

How much money did Wally have left after buying the CD player and CDs?

Show All Work

Answer $ _____

Exemplary Response:

- $14.25

AND

- Correct process

Sample Process:

- $28.25 + $4.75 + $4.75 = $37.75
  52 − 37.75 = $14.25

OR

- Other valid process

Rubric:

2 points	Exemplary response
1 point	Correct answer only OR Correct process; error in computation
0 points	Other

Test 7—Question 6 Score Point 2

This response matches the exemplary response contained in the rubric. The student shows a correct process and gives the correct answer of $14.25. The response receives a Score Point 2.

SCORE POINT 2

6 Wally had $52. He then bought a CD player and 2 CDs. The CD player cost $28.25 and the CDs cost $4.75 each.

How much money did Wally have left after buying the CD player and CDs?

Show All Work

$$\begin{array}{r} {\scriptstyle 1\,1\ \ 1} \\ \$28.25 \\ \$4.75 \\ +\ \$4.75 \\ \hline \$37.75 \end{array} \qquad \begin{array}{r} {\scriptstyle 4\ 11\ 9\ 1} \\ \$52.00 \\ -\ \$37.75 \\ \hline \$14.25 \end{array}$$

Answer $ 14.25

Test 7—Question 6 Score Point 1

This response shows a correct process. However, the student makes an error in computation when subtracting $37.75 from $52.00, which leads to an incorrect answer. Therefore, this response receives a Score Point 1.

SCORE POINT 1

6 Wally had $52. He then bought a CD player and 2 CDs. The CD player cost $28.25 and the CDs cost $4.75 each.

How much money did Wally have left after buying the CD player and CDs?

Show All Work

$$\begin{array}{r} {\scriptstyle 10\ 9\ 1} \\ \$52.00 \\ -\ \$37.75 \\ \hline \$23.25 \end{array} \qquad \begin{array}{r} {\scriptstyle 1\,1\ \ 1} \\ \$28.25 \\ \$4.75 \\ +\ \$4.75 \\ \hline \$37.75 \end{array}$$

Answer $ 23.25

SCORE POINT 0

6 Wally had $52. He then bought a CD player and 2 CDs. The CD player cost $28.25 and the CDs cost $4.75 each.

How much money did Wally have left after buying the CD player and CDs?

Show All Work

$$\begin{array}{r} {\scriptstyle 1\,1\ \ 1} \\ \$28.25 \\ \$4.75 \\ +\ \$4.75 \\ \hline \$37.75 \end{array}$$

Answer $ 37.75

Test 7—Question 6
Score Point 0

This response is incorrect. The student shows an incomplete process and an incorrect answer. Therefore, this response receives a Score Point 0.

Test 7—Question 7: Measurement

7 What is the area, in square centimeters, of a rectangle that measures 21 centimeters long and 8 centimeters wide?

Area of rectangle $= lw$
$=$ length $\times$ width

Show All Work

Answer _____ square centimeters

Exemplary Response:

- 168 square centimeters

AND

- Correct process

Sample Process:

- Area $= 21 \times 8$
  $= 168$

OR

- Other valid process

Rubric:

2 points	Exemplary response
1 point	Correct answer only OR Correct process; error in computation
0 points	Other

SCORE POINT 2

7 What is the area, in square centimeters, of a rectangle that measures 21 centimeters long and 8 centimeters wide?

Area of rectangle $= lw$
$=$ length $\times$ width

Show All Work

$$\begin{array}{r} 21 \\ \times\ 8 \\ \hline 168 \end{array}$$

Answer 168 square centimeters

Test 7—Question 7 Score Point 2

This response matches the exemplary response contained in the rubric. The student shows a correct process and gives the correct answer of 168 square centimeters. The response receives a Score Point 2.

SCORE POINT 1

7 What is the area, in square centimeters, of a rectangle that measures 21 centimeters long and 8 centimeters wide?

Area of rectangle $= lw$
$=$ length $\times$ width

Show All Work

$$\begin{array}{r} 21 \\ \times\ 8 \\ \hline 188 \end{array}$$

Answer 188 square centimeters

Test 7—Question 7 Score Point 1

This response shows a correct process. However, the student makes an error in computation that leads to an incorrect answer. Therefore, this response receives a Score Point 1.

Test 7—Question 7
Score Point 0

This response is incorrect. The student finds the perimeter of the rectangle instead of finding the area. Therefore, this response receives a Score Point 0.

SCORE POINT 0

7 What is the area, in square centimeters, of a rectangle that measures 21 centimeters long and 8 centimeters wide?

Area of rectangle $= lw$
$=$ length $\times$ width

Show All Work

$$\begin{array}{r} {\scriptstyle 1} \\ 21 \text{ sq. cm.} \\ 21 \text{ sq. cm.} \\ 8 \text{ sq. cm.} \\ +\ 8 \text{ sq. cm.} \\ \hline 58 \text{ sq. cm.} \end{array}$$

Answer 58 square centimeters

Test 8—Question 1: Algebra and Functions

1 The formula below shows the relationship between the number of horses Ms. Bannister owns, h, and the total number of hay bales, b, she buys each month.

$$b = 3 \times h$$

If Ms. Bannister owns 14 horses, how many hay bales will she buy in one month?

Show All Work

Answer _____ hay bales

Exemplary Response:

- 42 hay bales

AND

- Correct process

Sample Process:

- $b = 3 \times h$
  $= 3 \times 14$
  $= 42$

OR

- Other valid process

Rubric:

2 points	Exemplary response
1 point	Correct answer only OR Correct process; error in computation
0 points	Other

Test 8—Question 1
Score Point 2

This response matches the exemplary response contained in the rubric. The student shows a correct process and gives the correct answer of 42 hay bales. The response receives a Score Point 2.

SCORE POINT 2

1 The formula below shows the relationship between the number of horses Ms. Bannister owns, h, and the total number of hay bales, b, she buys each month.

$$b = 3 \times h$$

If Ms. Bannister owns 14 horses, how many hay bales will she buy in one month?

Show All Work

$$\begin{array}{r} {\scriptstyle 1} \\ 14 \\ \times\ 3 \\ \hline 42 \end{array}$$

Answer 42 hay bales

Test 8—Question 1
Score Point 1

This response shows a correct process. However, the student makes an error in computation that leads to an incorrect answer. Therefore, this response receives a Score Point 1.

SCORE POINT 1

1 The formula below shows the relationship between the number of horses Ms. Bannister owns, h, and the total number of hay bales, b, she buys each month.

$$b = 3 \times h$$

If Ms. Bannister owns 14 horses, how many hay bales will she buy in one month?

Show All Work

$$\begin{array}{r} {\scriptstyle *} \\ 14 \\ \times\ 3 \\ \hline 52 \end{array}$$

Answer 52 hay bales

SCORE POINT 0

1 The formula below shows the relationship between the number of horses Ms. Bannister owns, h, and the total number of hay bales, b, she buys each month.

$$b = 3 \times h$$

If Ms. Bannister owns 14 horses, how many hay bales will she buy in one month?

Show All Work

$$3\overline{)14}\quad 5$$

Answer 5 hay bales

Test 8—Question 1
Score Point 0

This response is incorrect. The student divides 14 by 3 instead of multiplying, as shown in the formula. Therefore, this response receives a Score Point 0.

Test 8—Question 2: Algebra and Functions

2 Bret creates the number pattern below. He takes each number and multiplies it by the same value to get the next number.

2, 6, 18, ____, 162

On the lines below, explain what multiplication rule Bret used to create the number pattern.

_____

_____

_____

_____

_____

What is the missing number in the number pattern?

Answer _____

Exemplary Response:

- Each number is multiplied by 3 to get the next number.

AND

- 54

Rubric:

2 points	Exemplary response
1 point	One correct component
0 points	Other

SCORE POINT 2

2 Bret creates the number pattern below. He takes each number and multiplies it by the same value to get the next number.

2, 6, 18, ____, 162

On the lines below, explain what multiplication rule Bret used to create the number pattern.

he is multiplying by three
because 2 × 3 = 6 6 × 3 = 18 18 × 3 = ?
? × 3 = 162

What is the missing number in the number pattern?

Answer 54

$$\begin{array}{r} {\scriptstyle 2}\,18 \\ \times\ 3 \\ \hline 54 \end{array} \qquad \begin{array}{r} {\scriptstyle 1}\,54 \\ \times\ 3 \\ \hline 162 \end{array}$$

Test 8—Question 2
Score Point 2

This response matches the exemplary response contained in the rubric. The student gives a correct rule for the number pattern and the correct answer of 54. The response receives a Score Point 2.

Test 8—Question 2
Score Point 1

This response shows the correct answer of 54. However, the student gives an invalid rule for the number pattern. Therefore, this response receives a Score Point 1.

SCORE POINT 1

2 Bret creates the number pattern below. He takes each number and multiplies it by the same value to get the next number.

2, 6, 18, 54, 162

On the lines below, explain what multiplication rule Bret used to create the number pattern.

he was going by the muliplucation numbers.

What is the missing number in the number pattern?

Answer 54

SCORE POINT 0

2 Bret creates the number pattern below. He takes each number and multiplies it by the same value to get the next number.

2, 6, 18, ___, 162

On the lines below, explain what multiplication rule Bret used to create the number pattern.

He would double that number each time.

What is the missing number in the number pattern?

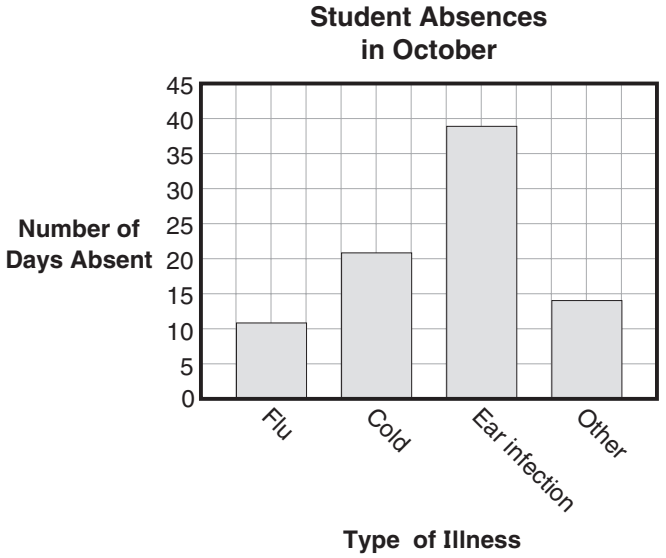
Answer 36

Test 8—Question 2
Score Point 0

This response is incorrect. The student gives an invalid rule for the number pattern and an incorrect answer. Therefore, this response receives a Score Point 0.

Test 8—Question 3: Problem Solving

3 The school nurse tracks student absences that are due to illness. The bar graph below shows student absences in October.



How many MORE absences were caused by ear infections than by colds in the month of October?

Show All Work

Answer _____ absences

In December, absences due to colds increased by 24, while absences due to ear infections stayed the same.

How many MORE absences were caused by colds than by ear infections in the month of December?

Show All Work

Answer _____ absences

Exemplary Response:

- Accept answers within a range of 16 to 18.

AND

- Correct process

Sample Process:

- Ear infection is about 38; cold is about 21.

  $38 - 21 = 17$

OR

- Other valid process

AND

- Accept answers within a range of 6 to 8.

AND

- Correct process

Sample Process:

- Ear infection is about 38; cold is about $21 + 24 = 45$.

  $45 - 38 = 7$

OR

- Other valid process

NOTE: Award credit for a correct process with an error in computation for both parts.

Rubric:

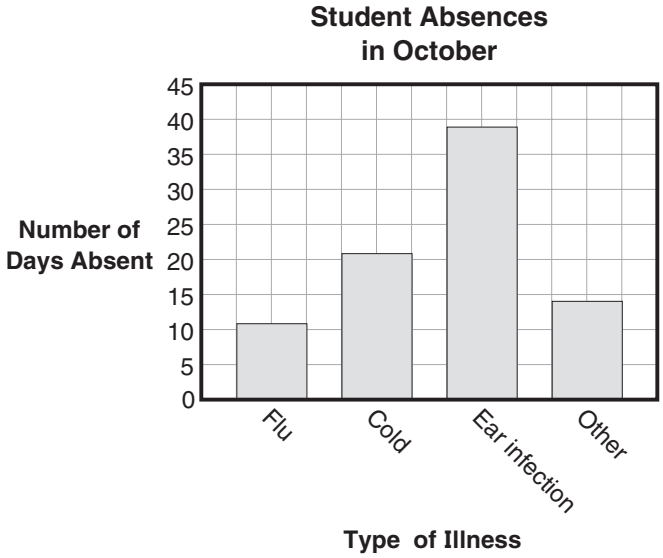
4 points	Exemplary response
3 points	Three correct components
2 points	Two correct components
1 point	One correct component
0 points	Other

Test 8—Question 3
Score Point 4

This response matches the exemplary response contained in the rubric. The student shows two correct processes and gives two correct answers. The response receives a Score Point 4.

SCORE POINT 4

3 The school nurse tracks student absences that are due to illness. The bar graph below shows student absences in October.



How many MORE absences were caused by ear infections than by colds in the month of October?

Show All Work

39
- 21
18

Answer 18 absences

In December, absences due to colds increased by 24, while absences due to ear infections stayed the same.

How many MORE absences were caused by colds than by ear infections in the month of December?

Show All Work

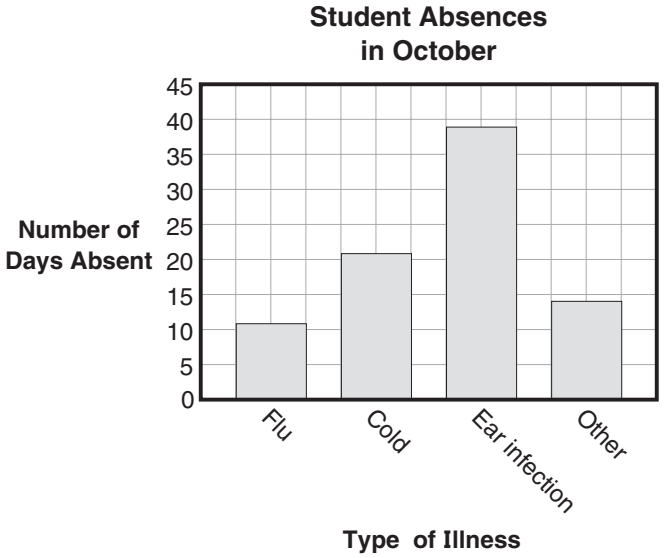
21
+ 24
45

3 15
~~45~~
- 39
06

Answer 6 absences

SCORE POINT 3

3 The school nurse tracks student absences that are due to illness. The bar graph below shows student absences in October.



How many MORE absences were caused by ear infections than by colds in the month of October?

Show All Work

$$\begin{array}{r} 38 \\ -\ 21 \\ \hline 17 \end{array}$$

Answer 17 absences

In December, absences due to colds increased by 24, while absences due to ear infections stayed the same.

How many MORE absences were caused by colds than by ear infections in the month of December?

Show All Work

$$\begin{array}{r} 21 \\ +\ 24 \\ \hline 45 \end{array} \qquad \begin{array}{r} {\scriptstyle 3\ 1} \\ 4\cancel{5} \\ -\ 38 \\ \hline 17 \end{array}$$

Answer 17 absences

Test 8—Question 3 Score Point 3

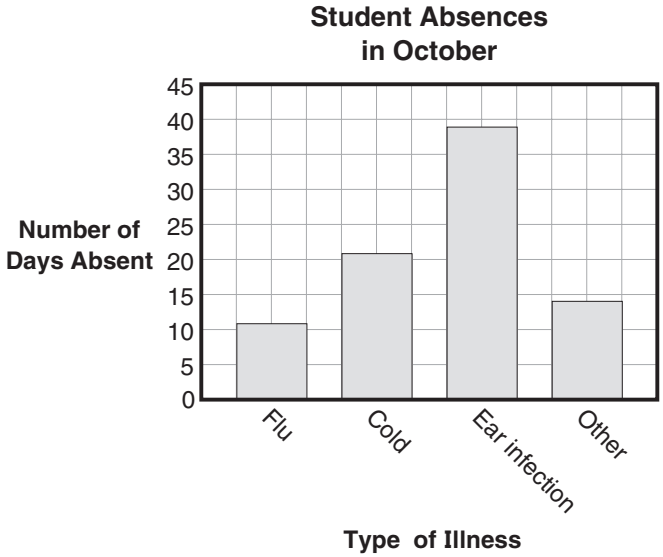
This response shows three correct components. The student shows a correct process and the correct answer in the first part of the question and a correct process in the second part of the question. However, the student makes an error in computation when subtracting 38 from 45, which leads to an incorrect answer. Therefore, this response receives a Score Point 3.

Test 8—Question 3
Score Point 2

This response shows two correct components. The student shows a correct process and the correct answer in the first part of the question. In the second part of the question, the student gives an incorrect answer and shows no process. Therefore, this response receives a Score Point 2.

SCORE POINT 2

3 The school nurse tracks student absences that are due to illness. The bar graph below shows student absences in October.



How many MORE absences were caused by ear infections than by colds in the month of October?

Show All Work

38
- 21
17

Answer 17 absences

In December, absences due to colds increased by 24, while absences due to ear infections stayed the same.

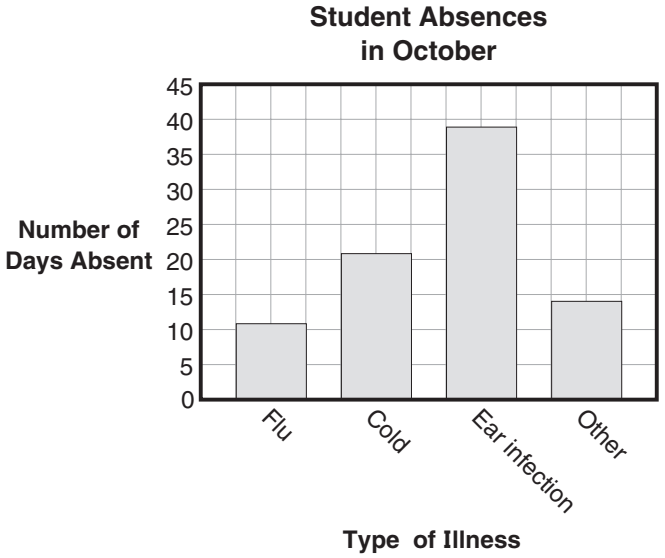
How many MORE absences were caused by colds than by ear infections in the month of December?

Show All Work

Answer 24 absences

SCORE POINT 1

3 The school nurse tracks student absences that are due to illness. The bar graph below shows student absences in October.



How many MORE absences were caused by ear infections than by colds in the month of October?

Show All Work

```
  21
- 38
----
  17
```

Cold = 21
Ear infection = 38

Answer 17 absences

In December, absences due to colds increased by 24, while absences due to ear infections stayed the same.

How many MORE absences were caused by colds than by ear infections in the month of December?

Show All Work

```
  24
- 38
----
  14
```

Colds = 24
ear infections = 38

Answer 14 absences

Test 8—Question 3 Score Point 1

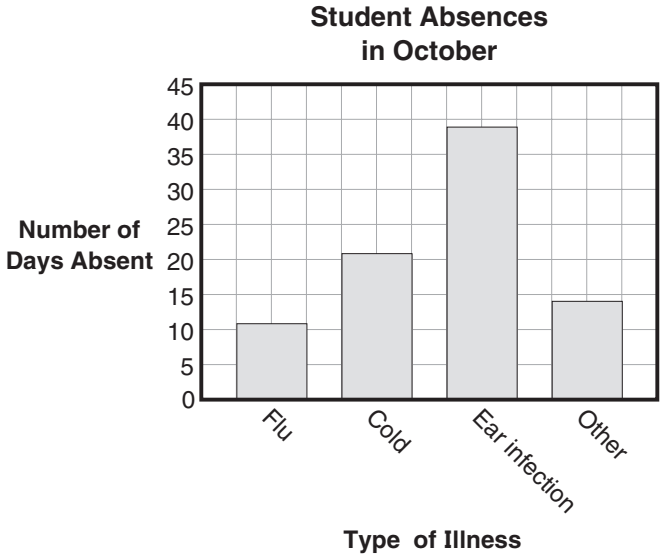
This response shows one correct component. The student gives the correct answer for the first part of the question. However, the student shows an incorrect process for both the first and second parts of the question and gives an incorrect answer for the second part of the question. Therefore, this response receives a Score Point 1.

Test 8—Question 3
Score Point 0

This response is incorrect. The student gives an incorrect answer and shows an incorrect process for both parts of the question. Therefore, this response receives a Score Point 0.

SCORE POINT 0

3 The school nurse tracks student absences that are due to illness. The bar graph below shows student absences in October.



How many MORE absences were caused by ear infections than by colds in the month of October?

Show All Work

15
+ 5
10

Answer 10 absences

In December, absences due to colds increased by 24, while absences due to ear infections stayed the same.

How many MORE absences were caused by colds than by ear infections in the month of December?

Show All Work

25
+ 3
30

Answer 30 absences

Test 8—Question 4: Algebra and Functions

4 Melissa has a box of 84 dog treats. She gives her dog 3 treats each day.

On the line below, write a number sentence that shows how many days it will take Melissa to use all of the dog treats in the box.

Number Sentence _____

On the line below, write a number sentence that can be used to check your first number sentence.

Number Sentence _____

Exemplary Response:

- $84 \div 3 = 28$

OR

- Other valid number sentence

AND

- $28 \times 3 = 84$

OR

- Other valid number sentence

NOTE: Award credit for a correct second number sentence based on an incorrect first number sentence.

Rubric:

2 points	Exemplary response
1 point	One correct component
0 points	Other

Test 8—Question 4
Score Point 2

This response matches the exemplary response contained in the rubric. The student gives two correct number sentences. The response receives a Score Point 2.

SCORE POINT 2

4 Melissa has a box of 84 dog treats. She gives her dog 3 treats each day.

On the line below, write a number sentence that shows how many days it will take Melissa to use all of the dog treats in the box.

Number Sentence 84 ÷ 3 = 28

On the line below, write a number sentence that can be used to check your first number sentence.

Number Sentence 3 × 28 = 84

Test 8—Question 4
Score Point 1

This response shows one correct number sentence. The student does not show a second number sentence. Therefore, this response receives a Score Point 1.

SCORE POINT 1

4 Melissa has a box of 84 dog treats. She gives her dog 3 treats each day.

On the line below, write a number sentence that shows how many days it will take Melissa to use all of the dog treats in the box.

Number Sentence 84 ÷ 3 = 28 days

On the line below, write a number sentence that can be used to check your first number sentence.

Number Sentence _____

SCORE POINT 0

4 Melissa has a box of 84 dog treats. She gives her dog 3 treats each day.

On the line below, write a number sentence that shows how many days it will take Melissa to use all of the dog treats in the box.

Number Sentence 7

On the line below, write a number sentence that can be used to check your first number sentence.

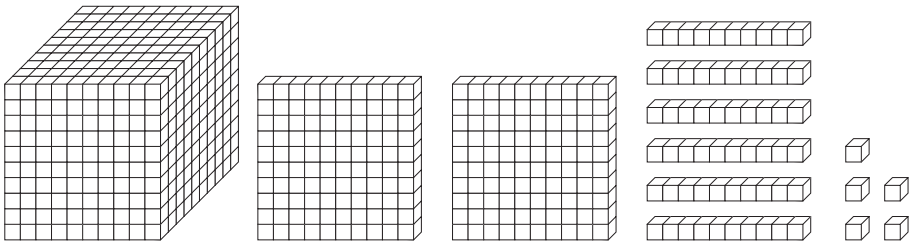
Number Sentence 10

Test 8—Question 4
Score Point 0

This response is incorrect. The student does not show any correct number sentences. Therefore, this response receives a Score Point 0.

Test 8—Question 5: Number Sense

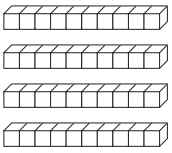
5 Look at the place-value blocks below.



What number is shown by the place-value blocks?

Answer _____

Dana added the following group of blocks to the original group.



On the lines below, explain how adding the blocks above changed the value of the original group.

_____

_____

_____

_____

Exemplary Response:

- 1,265

AND

- It will increase the total value by 40 to 1,305.

OR

- Other valid explanation

NOTE: Award 1 point for correct explanation based on incorrect value on the answer line.

Rubric:

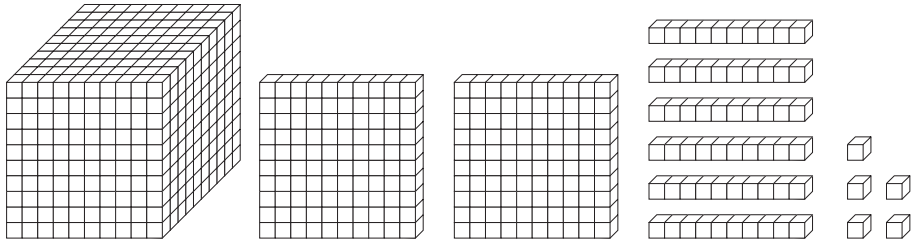
2 points	Exemplary response
1 point	One correct component
0 points	Other

Test 8—Question 5
Score Point 2

This response matches the exemplary response contained in the rubric. The student gives the correct answer of 1,265 and a valid explanation of how the value of the blocks will change. The response receives a Score Point 2.

SCORE POINT 2

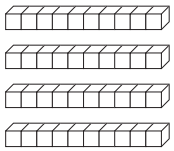
5 Look at the place-value blocks below.



What number is shown by the place-value blocks?

Answer 1,265

Dana added the following group of blocks to the original group.

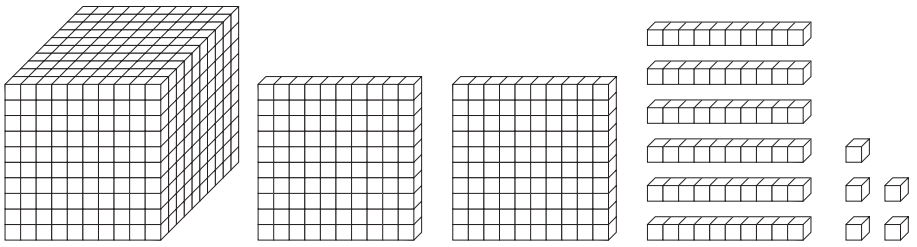


On the lines below, explain how adding the blocks above changed the value of the original group.

adding 40 blocks to 1,265 blocks will make the answer 1,305 blocks instead of 1,265 blocks

SCORE POINT 1

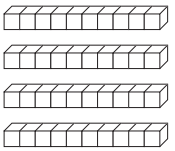
5 Look at the place-value blocks below.



What number is shown by the place-value blocks?

Answer 865

Dana added the following group of blocks to the original group.



On the lines below, explain how adding the blocks above changed the value of the original group.

865 changed to 905 because I added 40 blocks.

Test 8—Question 5
Score Point 1

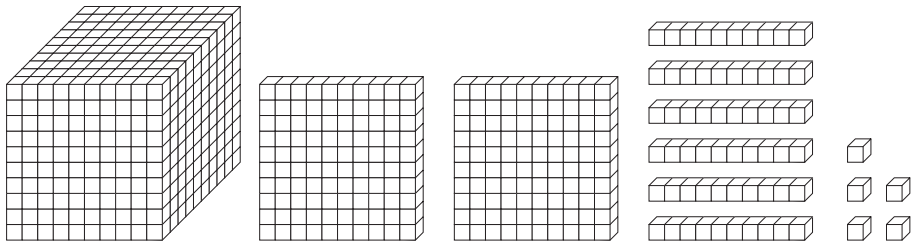
This response shows one correct component. The student gives a valid explanation based on an incorrect answer of 865 in the first part of the question. Therefore, this response receives a Score Point 1.

Test 8—Question 5
Score Point 0

This response is incorrect. The student gives an incorrect answer and an invalid explanation. Therefore, this response receives a Score Point 0.

SCORE POINT 0

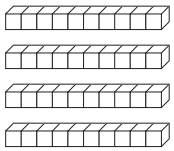
5 Look at the place-value blocks below.



What number is shown by the place-value blocks?

Answer 1,200

Dana added the following group of blocks to the original group.



On the lines below, explain how adding the blocks above changed the value of the original group.

The block are =.

Test 8—Question 6: Problem Solving

6 On Saturday, 28 boys and 29 girls tried out for a baseball team. Each child that made the team received a team shirt. Team shirts come in boxes of 10.

If 1 out of every 3 children made the team, ESTIMATE how many boxes of team shirts were used.

Show All Work

Estimate _____ boxes

Exemplary Response:

- 2 boxes

AND

- Correct process

Sample Process:

- Total children is about 30 + 30 = 60.

  Number that made the team: 60 ÷ 3 = 20

  Number of boxes = 20 ÷ 10, which is 2.

OR

- Other valid process

Rubric:

3 points	Exemplary response
2 points	Correct answer only OR Correct process; error in computation
1 point	Correctly calculates number of children that made the team OR Correctly determines number of boxes if all children made the team
0 points	Other

Test 8—Question 6
Score Point 3

This response matches the exemplary response contained in the rubric. The student shows a correct process and gives a correct estimate of 2 boxes. The response receives a Score Point 3.

SCORE POINT 3

6 On Saturday, 28 boys and 29 girls tried out for a baseball team. Each child that made the team received a team shirt. Team shirts come in boxes of 10.

If 1 out of every 3 children made the team, ESTIMATE how many boxes of team shirts were used.

Show All Work

28 → 30
+ 29 → + 30
? 60 ÷ 3 = 20

2 boxes = 20 shirt

Estimate 2 boxes

Test 8—Question 6
Score Point 2

This response shows only a correct estimate of 2 boxes. There is no process shown. Therefore, this response receives a Score Point 2.

SCORE POINT 2

6 On Saturday, 28 boys and 29 girls tried out for a baseball team. Each child that made the team received a team shirt. Team shirts come in boxes of 10.

If 1 out of every 3 children made the team, ESTIMATE how many boxes of team shirts were used.

Show All Work

Estimate 2 boxes

SCORE POINT 1

6 On Saturday, 28 boys and 29 girls tried out for a baseball team. Each child that made the team received a team shirt. Team shirts come in boxes of 10.

If 1 out of every 3 children made the team, ESTIMATE how many boxes of team shirts were used.

Show All Work

$$\begin{array}{r} 30 \\ +\ 30 \\ \hline 60 \end{array} \qquad 10\overline{)60} \quad \begin{array}{r} 6 \\ -\ 60 \\ \hline 0 \end{array}$$

Estimate 6 boxes

Test 8—Question 6
Score Point 1

This response is partially correct. The student finds the number of boxes of shirts needed for everyone trying out. However, the student does not use this information to find the number of boxes of shirts needed for only the children who made the team. Therefore, this response receives a Score Point 1.

SCORE POINT 0

6 On Saturday, 28 boys and 29 girls tried out for a baseball team. Each child that made the team received a team shirt. Team shirts come in boxes of 10.

If 1 out of every 3 children made the team, ESTIMATE how many boxes of team shirts were used.

Show All Work

$$\begin{array}{r} {\scriptstyle 2} \\ 29 \\ 28 \\ 10 \\ 3 \\ +\ 1 \\ \hline 71 \end{array}$$

Estimate 71 boxes

Test 8—Question 6
Score Point 0

This response is incorrect. The student adds all numbers given in the question, showing no understanding of what is being asked. Therefore, this response receives a Score Point 0.

Test 8—Question 7: Problem Solving

7 Mr. Toma has 8 beehives. Each beehive produces 55 pounds of honey in one year.

On the line below, write a number sentence to show the TOTAL amount of honey that Mr. Toma's beehives produce in one year.

Number Sentence _____

Mr. Toma's goal is to earn $1,500 selling honey to a grocery store in a year. He sells each pound of honey for $2.

Will Mr. Toma reach his goal? On the lines below, use values from the problem to explain how you know if Mr. Toma will reach his goal.

_____

_____

_____

_____

_____

Exemplary Response:

- $55 \times 8 = 440$

OR

- Other valid number sentence

AND

- No, because $440 \times \$2 = \$880$, and \$880 is much less than \$1,500.

OR

- Other valid explanation

NOTE: Award credit if the explanation is correct based on an incorrect number sentence.

Rubric:

2 points	Exemplary response
1 point	One correct component
0 points	Other

SCORE POINT 2

7 Mr. Toma has 8 beehives. Each beehive produces 55 pounds of honey in one year.

On the line below, write a number sentence to show the TOTAL amount of honey that Mr. Toma's beehives produce in one year.

Number Sentence 8 × 55 = 440 lbs.

$$\begin{array}{r} {\scriptstyle 4} \\ 55 \\ \times\ 8 \\ \hline 440 \end{array}$$

Mr. Toma's goal is to earn $1,500 selling honey to a grocery store in a year. He sells each pound of honey for $2.

Will Mr. Toma reach his goal? On the lines below, use values from the problem to explain how you know if Mr. Toma will reach his goal.

Mr. Toma will not reach his goal because he makes 440 lbs. a year. If you multiply 440 pounds by $2, Mr. Toma only makes $880 a year.

$$\begin{array}{r} 440 \text{ lbs.} \\ \times\ \ 2 \\ \hline \$880 \end{array}$$

Test 8—Question 7
Score Point 2

This response matches the exemplary response contained in the rubric. The student gives a correct number sentence and a valid explanation. The response receives a Score Point 2.

Test 8—Question 7
Score Point 1

This response shows a valid explanation. However, the student gives an incorrect number sentence. Therefore, this response receives a Score Point 1.

SCORE POINT 1

7 Mr. Toma has 8 beehives. Each beehive produces 55 pounds of honey in one year.

On the line below, write a number sentence to show the TOTAL amount of honey that Mr. Toma's beehives produce in one year.

Number Sentence 440 = 55 ÷ 8

$$\begin{array}{r} {\scriptstyle 4} \\ 55 \\ \times\ 8 \\ \hline 440 \end{array}$$

Mr. Toma's goal is to earn $1,500 selling honey to a grocery store in a year. He sells each pound of honey for $2.

Will Mr. Toma reach his goal? On the lines below, use values from the problem to explain how you know if Mr. Toma will reach his goal.

No because 440 × $2 = 880 not 1,500.

$$\begin{array}{r} 440 \\ \times\ \ 2 \\ \hline 880 \end{array}$$

SCORE POINT 0

7 Mr. Toma has 8 beehives. Each beehive produces 55 pounds of honey in one year.

On the line below, write a number sentence to show the TOTAL amount of honey that Mr. Toma's beehives produce in one year.

Number Sentence 8 + 55 = 143

Mr. Toma's goal is to earn $1,500 selling honey to a grocery store in a year. He sells each pound of honey for $2.

Will Mr. Toma reach his goal? On the lines below, use values from the problem to explain how you know if Mr. Toma will reach his goal.

Yes he will reach his goal.

$1500 + 2 = $1,700

Test 8—Question 7
Score Point 0

This response is incorrect. The student gives an incorrect number sentence and an invalid explanation. Therefore, this response receives a Score Point 0.

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